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Planning the Fire of Artillery and Missiles
of a Tank Division

by
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At the exercises, during the organization of a breakthrough of the "enemy" prepared defense from the march, limited time was available for the artillery staff of the tank division to plan the artillery fire (about 5 to 7 hours). Owing to this, the staff had to seek new methods for planning fire and working up combat documents, and reduce their number, as well as assign fire missions briefly and without unnecessary detail to those that had to carry them out, i.e., save time everywhere and in everything.

According to the plan of the director of the exercise, the tank division operated in the second echelon of the army. Toward the beginning of the operation the division concentrated in an area at a distance of 35 to 50 kms from the "enemy" main line of defense. The commander of the division received the order for the offensive from the commander of the army 2 hours after the concentration of the division, i.e., 15 hours before the beginning of the offensive.

For the organization of the battle (study of the order by the commander of the division, clarification of the mission, and informing the commanders of arms of troops of it, hearing their reports, reaching a decision on the breakthrough of the "enemy" defense) 3 hours were used up; for moving up the artillery to the siting area - 6 hours. For planning fire and working up combat documents, the artillery staff had only 6 hours at its disposal.

The limited time for preparation of the offensive forced the commander of the artillery of the division and his staff to reject the previously worked out forms and methods for planning artillery fire.

On the basis of the order of the commander of the division and instructions of the commander of artillery, the artillery staff produced two documents, "Fire Plan for the Artillery of a Division in an Offensive" (see diagram) and "Reconnaissance Plan of the Artillery Staff of a Division". Both documents were prepared graphically on a map with the necessary legend.

In the "Fire Plan for the Artillery of a Division in an Offensive" the following questions were dealt with: routes for moving up of artillery from a concentration area to the siting areas; fire position areas during the period of the breakthrough of the "enemy" line of defense and the displacement plan of artillery in battle; fire missions of artillery groups and battalions attached to regiments for the period of fire preparation and PSO sectors (sectors of successive concentration - posledovatelnoye sosredotocheniye ognya), fire tasks to safeguard boundaries with adjacent units and flanks, as well as to consolidate important lines and cover dangerous directions; objectives for destruction with nuclear weapons; missions of divisions and regiments of the first echelon; lines of commitment of the forward detachment and the second echelon of the division and their missions; lines of deployment of the antitank reserve of the division; chart of fire preparation with the assignment of missions among the artillery groups and the expenditure of ammunition per gun by calibers; missions of missile subunits; overall expenditure of ammunition; combat composition of artillery of the division by calibers and types (organic, attached, reinforcing artillery); composition of artillery groups and their fire potential; control signals and coordination.

The questions that could not possibly be dealt with graphically on the map (for example, the amount of artillery brought in to safeguard the boundaries with adjacent units and flanks, commitment into battle of the second echelon of the division and of the forward detachment, the flight path of an airborne landing force, etc.) were shown in the legend and in the explanatory inscriptions.

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To reduce the time for the elaboration of documents it is necessary for the staff to have prepared forms for battle documents. When the mission is received and the decision is taken, the forms are filled in, and the data on these documents is then transferred on to the map in the "Fire Plan for Artillery".

The "Map of Fire Control" was not elaborated on at the artillery staff. In our view, therefore, there was no necessity to deal with questions in the "Fire Plan for Artillery", which were previously dealt with in the "Map of Fire Control" and which are not widely used by the forces. We have in view the fire zones of the artillery groups, planning of artillery fire to ensure the commitment into battle of the second echelon and the leading detachment of a division, the order of displacing artillery during the course of combat, code names for terrain features and landmarks, and sectors of massed artillery fire. We shall briefly substantiate our proposals.

Previously, during a breakthrough of a prepared enemy defense, a tank division was reinforced by a minimum of one artillery brigade. With the appearance of subunits of tactical and operational-tactical missiles in the troops, the need by the division for tube artillery has naturally decreased. However, in modern day conditions the division can be reinforced by one or two artillery battalions. Thus, with four organic and one or two attached battalions in a tank division, one to two artillery groups can be formed.

The offensive zone of a division has considerably increased, and owing to this the commander of the division will strive to have in his hands a more powerful divisional artillery group of up to three battalions. Then the regiments of the first echelon and the leading detachment will be able to receive one battalion each as reinforcements. Sometimes, in a regiment operating on the main axis, a regimental artillery group will be formed consisting of two battalions.

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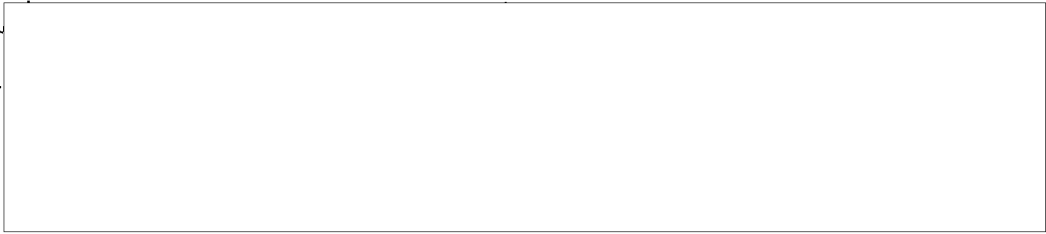
If a regiment of the first echelon is advancing in a zone of up to 6 kms or more, then the attached artillery battalion will not be able to fulfil all the fire missions in this zone. Therefore, it is inadvisable to give main and supplementary fire zones to the regimental artillery group (two battalions) or to one battalion attached to the regiment.

The experience of the last war and postwar exercises shows that the actual lines of committing the second echelon and leading detachment into combat very rarely coincide with the previously contemplated lines, since the operations of the regiments of the first echelon and of the enemy introduce considerable amendments into these plans. Therefore, the previously planned fire of artillery in order to ensure the commitment of the second echelon and of the leading detachment into combat very frequently becomes unnecessary, and sometimes creates confusion. In planning the artillery operations for this period, the artillery staff expends a great deal of time.

Regarding the inadvisability of planning artillery support for the commitment of the second echelon and of the forward detachment of a tank division into combat, no less convincing is the following fact. During the commitment into battle of the second echelon and of the leading detachment, the artillery commander of the division will have sufficient time available to specifically and directly plan and prepare the artillery fire in front of the lines of commitment on the basis of the reconnoitered targets. This fire will unquestionably be more effective than the one which would have been planned in advance in the area of concentration, based only on the conditions of the terrain and the lines of commitment.

The efficiency (natrenirovannost) and smooth functioning of intelligence organs and control points have now sharply reduced the time necessary for the preparation of unplanned fire. In many units a request

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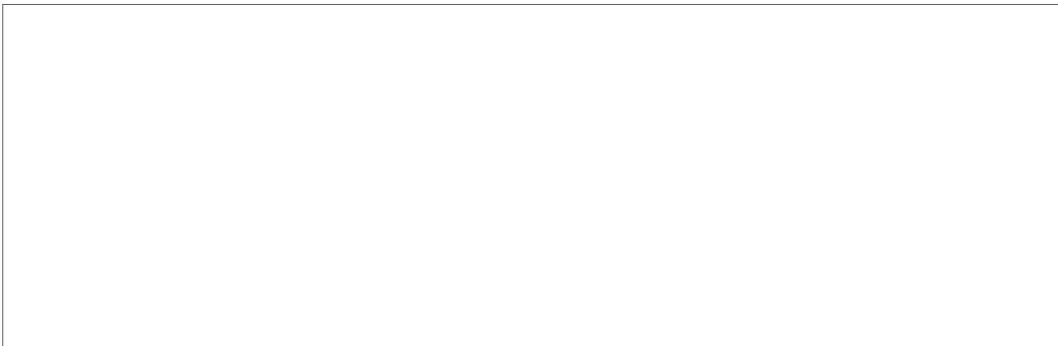


for unplanned artillery fire differs little as far as time is concerned from a request for planned fire. It is doubtful whether there is any sense in planning artillery fire in advance, because before committing the second echelon and the leading detachment into battle, the artillery subunits in any case have to elaborate the fire missions or reassign them anew.

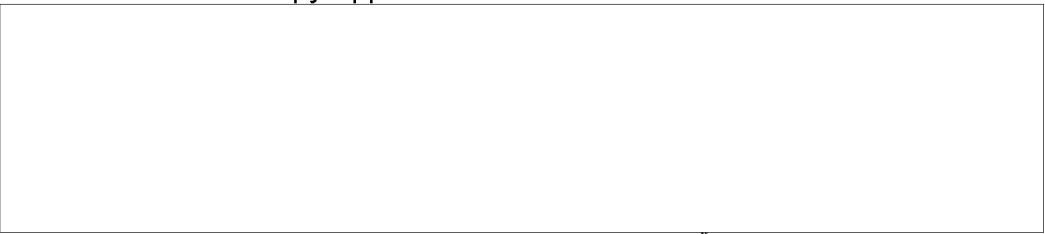
During the assigning of missions to the commanders of the artillery groups, the artillery commander of the division has only to indicate which groups or battalions have to be brought in for artillery support for the commitment into combat of the second echelon and the leading detachment of the division, in order to direct in advance the commanders of the groups (battalions) in the fulfilment of these missions.

Experience shows that it is advisable for the artillery battalions attached to the regiments of the first echelon to plan their displacement in advance, only to the depth of the immediate mission of the regiments. The planning of the displacement of the artillery for the entire depth of the mission of the regiments of the first echelon did not justify itself in the exercises, because the combat operations of the regiments of the first echelon and of the "enemy" as well as the employment of means of mass destruction introduce their own adjustments. The previously selected areas for the firing positions of the battalions frequently were not occupied. But the missions for the displacement of a battalion (division) and even a regimental group are assigned by the commander of the regiment in conformity with the actions of the battalions (batalon) of the first echelon and of the enemy, conditions of the terrain, and the results of the use of nuclear weapons.

It is necessary to plan the displacement of the divisional artillery group to the total depth of the division's mission.



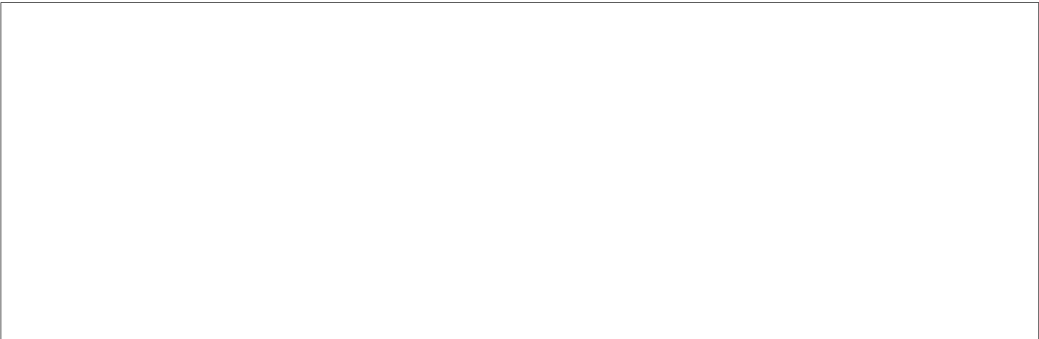
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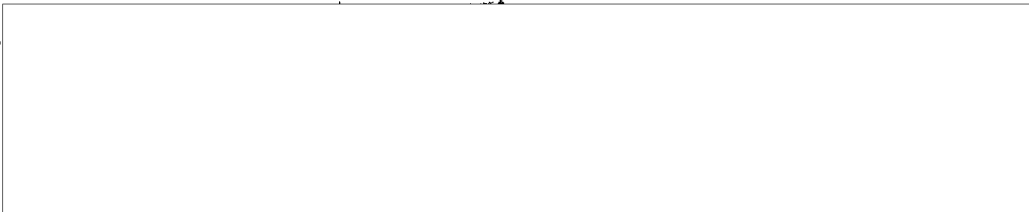
It is doubtful whether it is expedient to enter on the "Fire Plan for Artillery" the code names of the terrain features and landmarks. A well-elaborated signal table and a coded map make fire control and assignment of targets possible without resorting to the aid of the code names of the terrain features and landmarks. With this we save time for the working out of the most important questions; at the same time we do not overload the map with data which have no practical use to the troops. It is surely clear to all that during operations of a tank division in its operational depth (depth of the mission is about 100 kms) there is no need to enter code names of the local features and landmarks on maps.

In battle, the chief of artillery of a tank division, having under his command 5 to 6 battalions of organic and attached artillery, operating in a zone of 12 kms or more and at a depth of up to 100 kms, is not always in a position to call for concentrated (massed) fire even of three battalions. With the average offensive speed of a division of 10 kms per hour the artillery groups and battalions attached to the regiments of the first echelon will be on the move, rather than delivering fire, most of the time. Out of the 5 to 6 battalions, only 2 to 3 will be in firing positions, the others being on the move. It is also necessary to take into account that the batteries located at the firing positions will not always take part in the massed artillery fire of the division, owing to their limited range of fire.

Massed fire can be planned beforehand only when water obstacles are being forced, and during the capture and consolidation of important lines. In the other cases it must not be planned. In order to know where the attached battalions are located and which fire mission they are carrying out at a given moment, the chief of artillery of the division must continuously maintain direct communications with the battalion commanders.



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In its content the "Fire Plan for Artillery in an Offensive" basically reflects all the questions elaborated on the map of fire control, and the basic points of the combat order of the chief of artillery of the division. The drawing up of such a plan is particularly important in these cases when the artillery staff has only a few hours to plan combat operations and there is not time to work out a written combat order.

The planning at the artillery staff and in the staffs of the artillery groups (battalions) must be carried out at the same time (simultaneously) and should begin before the commander of the division gives the combat order.

The chief of artillery of the division, on receipt of a mission from the chief of artillery of the army, examines it and then reports to the commander of the division, giving his views for the employment of artillery, and first of all the tactical missile battalions, on the choice of objectives for nuclear strikes, on the use of the antitank reserves, on the timing of the moving up of artillery to the siting area on time, and the duration of the fire preparation (if this is not laid down by the higher headquarters) and other questions of interest to the commander of the division.

As soon as the commander of the division confirms the grouping of artillery, the artillery staff begins the planning of the combat operations and immediately summons the chiefs of staff of the artillery groups and battalions attached to the regiments.

As a rule, when the commander of the division issues his verbal combat order, all unit commanders and chiefs of staffs are present. The commanders and chiefs of staff of the artillery units plot on the map the mission of the division, regiments, and adjacent units, the dividing lines, missions of missiles and

artillery, the starting time for the moving out of units (including artillery) to the line of deployment, etc. The artillery staff of the division, jointly with the officers of the staffs of the artillery units, are at this time engaged in planning combat operations.

After the commander of the division issues the combat order and organizes the coordination, the chief of artillery assigns tasks to the commanders of artillery groups (battalions) from a map. Having plotted the missions of the groups (battalions) and all the necessary data from the "Fire Plan" and the "Reconnaissance Plan" on the map, the officers depart to their units, possessing the basic data for planning combat operations. At their locations they have only to complete work on the documents in detail and then pass on the missions to those who will be carrying them out.

This practice of joint planning of the combat operations gains a great deal of time and frees the artillery staff of the division from the preparation of extracts from the "Fire Plan" and the "Combat Orders for Intelligence" and passing them to the executors.

An important place in the "Fire Plan of the Artillery of a Division" is taken by the coordination of fire of the divisional artillery group with the fire of the regimental artillery groups or battalions attached to the regiments of the first echelon. In the plan, artillery fire is also provided for in case of a miss or failure to explode of nuclear shells and bombs.

At the exercises, an organic battalion (at that time it was called a battery) of tactical missiles operated in the composition of the division. In view of the limited amount of artillery, the tactical missile battalion in the hands of the commander of the division was a powerful weapon influencing the success in battle of the division.

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For the protection of the battalion, preparation of the sites, and the laying of routes from the assembly area to the launching sites, the commander of the division attached to the battalion commander a motorized rifle company, a combat engineer platoon, and two tanks with bulldozer attachments (BTU).

When planning the combat operations, the artillery staff of the division pointed out to the battery commander the assembly area, and the launching site area, targets for destruction by nuclear ammunition (time of the strikes, rectangular coordinates of the grounds zero, yield and height of the bursts), the sequence of displacement of the battalion during the battle, and the main direction of fire.

In selecting the assembly area and the launching sites for the battalion of tactical missiles, the artillery staff of the division bore in mind the availability of passable sectors of the terrain, bridges over rivers, and the existence in this area of good natural cover and natural features which if correctly used could ensure the camouflage of the combat equipment and personnel of the battalion from ground and air observation by the "enemy".

The assembly area was selected 15 kms, and the launching sites 8 to 9 kms, from the main line of defense of the "enemy". The assembly areas for the displacement of the battalion were allotted in the zone of the impending combat operations of the division, 12 to 15 kms from each other, taking into account that the battalion would be moving not as a whole, but launcher by launcher (otdelnaya ustanovka).

Exercises have shown that with a creative approach the artillery staff of a tank division can in a limited time (5 to 7 hours) thoroughly plan the fire of the artillery of the division during the breakthrough of the enemy's prepared defense from the march.

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Distribution of Fire Tasks for Missile Artillery and Aviation

No. of nuclear strikes (sectors)	Mission of the division. Operation; of tanks and infantry	Targets for destruction by atomic and conventional ammunition	Coordinates		Characteristics			Time of strike	Signals	No. of fire position (OF)	Safe Distances			Expected losses
			x	y	Yield (kt)	Type	Height (m)				Exposed Personnel	Personnel under cover	Personnel in tanks	
1001	Breakthrough of enemy prepared defense	Company strong point (covered personnel and fire means) 2 x 1.5	67120	96840	3	Air burst (VV)	120	7.40	KAZEEK	1	2.7	2.6	2.2	30
1002	Tanks on line of deployment	Strong point (personnel in tanks) 2 x 1.5	61500	03550	3	Air burst (VV)	120	7.40	KAZEEK	2	2.7	2.6	2.2	55
1003	Crews in tanks with means of antichemical protection	Artillery battery at fire position (OF) 1.5 x 0.5	67120	96840	20	Surface burst (VH)	190	7.40	KAZEEK	Army	-	-	-	40
1004	Carry on a battle for a combat position.	Tank battalion in area of concentration 3 x 2	67670	92850	20	Surface burst (VH)	190	8.04	KAZEEK	2	-	-	-	37

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Distribution of Fire Tasks for Tube Artillery

Periods of artillery combat operations.	Time	Signal	Actions of tanks and infantry	Artillery Actions				Expenditure of Ammunition			
				Divisional Artillery Group (DAG)-47	Regimental Artillery Group (PAG)-107	2/3d artillery regiments (ap)	Antitank (PT) reserve	122 mm	152 mm	BM-24	122 mm with R-2
Concentration (ON)-10 minutes	7.48 to 7.58	'TUCHA'	Locate on line of deployment, infantry under cover.	Neutralize the personnel, fire resources and batteries of the enemy in the strongpoints of his combat position on sectors: <div><div>102 18 hectares (ga)</div><div>102 18 hectares</div><div>103 20 hectares</div><div>101 9 hectares</div></div>			Take up antitank positions	35	8	24	6
Suppression of enemy batteries concentration (ON)-15 minutes.	7.48 to 8.03			Neutralize the enemy batteries, targets Nos. 501, 502, 503, 504				38			
Artillery support of the offensive	7.58	'GRCH'	Attack the main line of resistance	Support the assault of tanks and infantry by successive fire concentration (PSO) on request. Support the forcing of the rivers Volna, Svisloch, Ptich, Ussa, be ready to bring concentrated fire on sectors. <div><div>201, 206 for 9 hectares</div><div>202, 210 for 9 hectares</div><div>204, 206, 208, 211 for 9 hectares</div></div> <div><div>2 illegible three-digit numbers single-digit hectares</div><div>2 illegible three-digit numbers 4.5 hectares</div><div>Blank</div></div>			Ready to occupy deployment line No. 1				

/illegible list of signals/

Note: /illegible line/... ammunition with R-2.

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Artillery Combat Strength

Units and subunits	Mortars			Guns			Tank destroyer battalion (IPTD)				Rocket Artillery (RA)	Total
	82 mm	120 mm	Total	122 mm Howitzer (C)	152 mm Gun-How. (F-G)	Total	82mm Recoil-less (B/C)	57 mm Gun (P)	105 mm Gun (F)	Total		
Divisional Artillery												
34 art. rég. (AP)	-	-	-	54	-	54	-	-	-	-	-	54
19 HL battalion (read)	-	-	-	-	-	-	-	-	-	-	18	18
107 mot/rifle/reg.(msp)	9	6	15	-	-	-	6	6	6	18	-	33
Total in tank div. (td)	9	6	15	54	-	54	6	6	6	18	18	107 /Sic - should be 105/
Reinforcement Artillery												
4 army gun art. brig. (apabr)	-	-	-	-	18	18	-	-	-	-	-	18
Total in tank div. (td)	9	6	15	54	18	72	6	6	6	18	18	125

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Artillery Composition and Firepower

Designation of groups and their composition	Type			Firepower				
	Caliber	Number of battalions	Number of pieces	Standing Barrage NZO (m)	Creeping barrage PZO (m)	To suppress enemy batteries	Personnel and fire resources	
							Under cover	Exposed
Divisional Artillery Group (DAG)-47:								
34 art. reg. (without two battalions)	122	1	18	900	450	Up to 3	9	12
4/8 army gun art. brig. (apabr)	152	1	18	900	450	Up to 3	9	12
Regimental Artillery Group (PAG)-107:								
1/34 art. reg.	122	1	18	900	450	Up to 3	9	12
19 RL battalion	BM-24	1	18	-	-	-	20	45
178 tank reg. (2/34 art. reg.)	122	1	18	900	450	Up to 3	9	12
47 missile battery (r. batr.)	-	-	2	-	-	-	-	-
Total in tank div. (td)	-	5	90/2	3600	1800	Up to 12	56	93

Control Signals

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Troop Operations	Call Signals
Start of artillery preparation	"TUCHA"
Assault	"URAGAN"
Support of commitment of PO div. into combat	"SHTORM"
Support of commitment of 2nd echelon of div. into combat	"OBLAKO"
Enemy has made atomic strike	"G....."
[Eight more entries illegible]	

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Nuclear Warheads Allotted

	Tactical missiles				Operational-tactical missiles			Aircraft bombs		Total
	3 kt	10 kt	20 kt	Total missile kt	20 kt	40 kt	Total missile kt	40 kt	Total bomb kt	Missile/bomb kt
Allotted for 10.3	2	1	1	4/36	1	1	2/60	1	1/40	7/136

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Expenditure of warheads per combat day

Artillery and mortar rounds 0.8 unit of fire

Chemical 0.075 unit of fire

Organic missiles with conventional charges 8 units (slit)

Of these for artillery preparation:

122 mm 0.5 unit of fire

152 mm 0.6 unit of fire

BM-24 0.4 unit of fire

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